

RULE AS PRELIMINARILY ADOPTED ON DECEMBER 3, 1997

TITLE 326 AIR POLLUTION CONTROL BOARD

Proposed Rule LSA Document #97-359

DIGEST

Adds 326 IAC 8-13 to regulate emissions of volatile organic compounds (VOC) from sinter plants. Effective 30 days after filing with the secretary of state.

HISTORY

First Notice of Comment Period: August 1, 1994, Indiana Register (17 IR 2707).
Second Notice of Comment Period and Notice of First Hearing: August 1, 1997, Indiana Register (20 IR 3185).
Date of First Hearing: December 3, 1997.
Proposed Rule and Notice of Public Hearing: January 1, 1998 (21 IR 1419).
Second Public Hearing: February 4, 1998.

326 IAC 8-13

SECTION 1. 326 IAC 8-13 IS ADDED TO READ AS FOLLOWS:

Rule 13. Sinter Plants

326 IAC 8-13-1 Applicability

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 1. This rule applies to sintering processes that exist on the effective date of this rule at integrated iron and steel manufacturing facilities in Lake and Porter Counties. (*Air Pollution Control Board; 326 IAC 8-13-1*)

326 IAC 8-13-2 Definitions

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 2. The following definitions apply throughout this rule:

(1) “Control device” means any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Control devices include, but are not limited to, the following:

(A) Incinerators.

(B) Carbon adsorbers.

(2) “Control measure” means a method to reduce volatile organic compound (VOC) emissions to the atmosphere. The control measure may consist of, but is not limited to, the following:

(A) A control device.

(B) A process material control, such as sinter burden oil and grease content control.

(C) A process change, such as recirculation of windbox exhaust gases.

(3) “Equivalent method” means any method of sampling and analyzing for an air pollutant or any characteristic, such as oil and grease content of the sinter burden, that has been demonstrated to the satisfaction of the commissioner to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

(4) “Exceedance” means the value of the control measure operating parameter outside the stated boundaries.

(5) “Integrated iron and steel manufacturing facilities” means facilities that have primary raw material and ironmaking facilities (blast furnaces), steelmaking facilities (basic oxygen furnaces), and finishing mills. Integrated iron and steel manufacturing facilities do not include the following:

(A) Alloy and specialty steel facilities that produce alloys and specialty steel but do not include ironmaking facilities.

(B) Nonintegrated facilities that operate melting and casting units and fabrication mills.

(6) “Operating day” means a twenty-four (24) hour period between midnight and the following midnight during which the sinter is produced. It is not necessary for the facility to operate continuously for the entire twenty-four (24) hour period.

(7) “Reference method” means any method of sampling and analyzing for an air pollutant or any characteristic, such as oil and grease content of the sinter burden, as specified in this rule.

(8) “Sinter” means a coherent mass formed by heating raw materials, such as, but not limited to, the following:

(A) Iron ore.

(B) Coke breeze.

(C) Limestone.

(D) Scale.

(E) Blast furnace flue dust.

(9) “Sinter burden” means the mixture of raw materials prior to use in the sintering process.

(10) “Sinter strand” means a belt that conveys the sinter burden through the sintering process. The burden is conveyed on the strand through a furnace that ignites the fuel in the burden and is then heated under an induced draft to form sinter.

(11) “Sintering process” means the process of igniting fuel in sinter burden and then heating it under an induced draft to form an agglomerate.

(12) “Windboxes” means compartments under the sinter strand that provide for a controlled distribution of combustion air as it is drawn through the sinter bed.

(Air Pollution Control Board; 326 IAC 8-13-2)

326 IAC 8-13-3 Emission limit

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 3. (a) On and after January 1, 1999, sinter plant windbox exhaust gas VOC emissions shall be limited as provided in subsections (b) and (c).

(b) From May 1 until September 30, sinter plant windbox exhaust gas VOC emissions shall not exceed the VOC emission limit calculated as follows:

VOC (lbs/day) = VOC emission rate (lbs/ton) x average daily sinter production rate (tons/day)

Where: VOC emission rate = 0.25 lbs/ton sinter produced.

Average daily sinter production rate equals either of the following:

(1) The annual average sinter production in tons divided by the average number of operating days in the period 1990 through 1994.

(2) An alternative production rate that is demonstrated to be more representative of the average daily sinter production than that calculated in subdivision (1).

(c) From October 1 until April 30, sinter plant windbox exhaust gas VOC emissions shall be limited to thirty-six hundredths (0.36) pound per ton of sinter produced. The limit shall be complied with on an operating day average basis. *(Air Pollution Control Board; 326 IAC 8-13-3)*

326 IAC 8-13-4 Compliance requirements

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 4. (a) On and after January 1, 1999, the owner or operator of a sintering process shall comply with the following:

- (1) The applicable emission limits in section 3 of this rule.**
- (2) The control measure operation, maintenance, and monitoring requirements of the applicable subsection in section 6 of this rule.**
- (3) The record keeping and reporting requirements of the applicable subsection in section 7 of this rule.**

(b) By November 1, 1998, the owner or operator of a sintering process shall submit the following:

(1) A report detailing how the limits in section 3(b) and 3(c) of this rule will be met. The report shall contain the following:

- (A) A list of the control measures selected to comply with section 3 of this rule.**
- (B) The list shall contain, at a minimum, a measure to reduce mill scale oil and grease content before its removal from the scale pits at the hot strip mills. The measure may consist of any of the following:**
 - (i) Skimming oil and grease prior to removing the mill scale.**
 - (ii) Removal of mill scale from the scale pit using a vacuum device.**
 - (iii) A procedure that will prevent oil and grease from being entrained in the mill scale when it is being removed from the scale pits.**
- (C) The operating parameter that best describes the VOC control effectiveness of the selected control measure considering the following:**
 - (i) If a control device is the selected control measure, the operating parameter shall meet the requirements of 326 IAC 8-10-8(b).**
 - (ii) If sinter burden oil and grease content control is the selected control measure and the owner or operator chooses sinter burden oil and grease content as the operating parameter, the value of the operating parameter shall be determined using the procedure in section 5(d) of this rule or an alternative procedure in section 5(e) of this rule. The report shall include the alternative procedure.**
 - (iii) If an alternative control measure is selected, the owner or operator shall include in the report the procedures to be followed to comply with the control measure operation, maintenance, and monitoring requirements of section 6 of this rule and the record keeping requirements of section 7 of this rule.**
 - (iv) For the control measure in clause (B), the owner or operator shall include in the report a description of the millscale removal equipment, procedure, expected removal efficiency and the procedures to**

maintain the efficiency at the expected value.

(2) If oil and grease content control is the selected control measure and the owner of operator chooses an alternative sampling frequency in section 6(c) of this rule, then the alternative procedure shall be submitted according to section 6(c) of this rule. The owner or operator shall also include in the report required by subdivision (1) the procedures to comply with recordkeeping requirements in section 7(b)(1) of this rule.

(3) The procedure the source will use during the compliance testing to ensure that the operating parameter is consistent with VOC emissions.

(4) The department shall review the report required by subdivision (1) and within fifteen (15) days of receiving the report may request the owner or operator in writing to make changes to the report. The source shall respond in writing within thirty (30) days of the request. In its response the source shall either make the changes requested by the department or provide alternatives for changes requested by the department.

(c) Within sixty (60) days of the compliance dates in section 3(b) and 3(c) of this rule, a demonstration of initial compliance with the emission limits in section 3 shall be submitted. The initial compliance demonstration shall be performed as follows:

(1) Demonstrate compliance with the emission rate in section 3(b) and 3(c) of this rule in pounds per ton sinter produced.

(2) Follow the source sampling procedures in 326 IAC 3-6-2.

(3) Follow the emission testing procedures in 326 IAC 3-6-3 and section 5 of this rule.

(4) Submit to the department the results of the initial compliance test according to the procedures in 326 IAC 3-6-4. In addition, include the following information in the test report:

(A) Sinter burden oil and grease content analysis procedure, if there were any deviations from the procedures in the report submitted in subsection (b).

(B) Results of each sinter burden oil and grease content analysis.

(C) Sinter burden throughput in tons per hour and composition for each test run.

(D) Sinter production in tons per hour for each test run.

(E) The operating parameter value that demonstrates compliance with the emission limit.

(F) Emission rate in pounds per ton sinter produced.

(d) On and after January 1, 1999, the owner or operator shall ensure that the value of the operating parameter is within the range specified in the applicable subdivision of section 6 of this rule.

(e) An owner or operator may satisfy the requirements of subsection (c) by

submitting a demonstration that was performed before the compliance date in section 3(a) of this rule if the owner or operator met the reporting requirements of subsection (b) and the prior notification and submission schedules of 326 IAC 3-6-2, and the demonstration otherwise satisfies the requirements of subsection (c).

(f) An owner or operator of a sintering operation who elects to change the control measure conditions after the most recent compliance test shall do the following:

(1) Notify the department at least twenty-one (21) days before implementing the change. Notification shall include the following:

(A) A description of the control measure and the appropriate operating parameter.

(B) The date the change will be implemented.

(C) The plan to comply with this rule with the changed control measure.

(2) Perform a compliance test within sixty (60) days of implementing the change as follows:

(A) Follow the source sampling procedures in 326 IAC 3-6-2.

(B) Follow the applicable test procedures in section 5 of this rule.

(C) Calculate the operating parameter value that demonstrates compliance with the emission limit during the compliance test.

(D) Submit the compliance test results according to procedures in subsection (c)(4).

(3) Maintain the value of the operating parameter within the specified boundaries after the date that the compliance test is complete.

(g) An exceedance of the applicable operating parameter value constitutes prima facie evidence of a violation of the applicable mass emission limit. Upon a written notification from the department of an exceedance the source may perform a compliance test according to procedures in section 5 of this rule and petition the commissioner to revise the operating parameter value.

(Air Pollution Control Board; 326 IAC 8-13-4)

326 IAC 8-13-5 Test procedures

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 5. (a) Windbox gas VOC emission tests are required under the following conditions:

(1) An initial test as required in section 4(c) of this rule.

(2) When there is a change in the control measure since the most recent compliance test.

(3) When required by the department or the U.S. EPA.

(b) Compliance with the emission limit in section 3 of this rule shall be demonstrated according to testing procedures in 326 IAC 3-6-3 and 326 IAC 3-6-5.

(c) Owners or operators of a sintering process in which the windbox gas exhausts into the atmosphere through more than one (1) stack shall test each stack for compliance with the emission limit in section 3 of this rule unless there is a demonstration that satisfies the commissioner that sampling a lesser number of stacks yields results comparable to those that will be obtained by testing all stacks. Owners or operators of a sintering process who intend to submit such demonstration shall include the demonstration in the protocol required in section 4 of this rule.

(d) If sinter burden oil and grease content control is the selected control measure and the owner or operator chooses to monitor the sinter burden oil and grease content, the operating parameter shall be determined as follows:

- (1) Collect the sinter burden sample at a location such that the sample is representative of the sinter burden before it goes through the sintering process.**
- (2) Collect a sinter burden grab sample for analysis every fifteen (15) minutes for the duration of the test. The first sample shall be taken at the beginning of the test run. Each sample shall weigh at least one (1) pound.**
- (3) Analyze each sample for oil and grease content using procedures in Method 9071A "Oil and Grease Extraction Method for Sludge Samples", U.S. EPA publication "Test Methods for Evaluating Solid Wastes", SW-846, Volume 1C, Chapter 5, revised September 1994*; n-hexane shall be used instead of trichlorotrifluorethane as an extraction reagent.**
- (4) Estimate oil and grease content as percent by weight of the sinter burden to three (3) places after the decimal.**
- (5) Analyze oil and grease data outliers using Chauvenet's Criterion at Page I-7 in "Guide to Statistical Problem Solving" prepared for U.S. EPA, Research Triangle Park, North Carolina, under contract number 68-02-1505, June 1975* or an alternative acceptable statistical procedure. Remove outliers that result from any cause other than the normal characteristics of the sinter burden.**
- (6) Repeat the procedures in subdivisions 1 through 4 if the number of representative data is less than ten (10).**
- (7) Using representative oil and grease content data from subdivisions (4) through (6), determine the oil content average and standard deviation as follows:**

Equation 1:

Average oil and grease content, percent (%) by weight = $\Sigma x/n$

Equation 2:

$$s = \sqrt{((\Sigma x^2 - ((\Sigma x)^2/n))/(n-1))}$$

Where: n = Number of samples.

s = Standard deviation of oil and grease content percent by weight.

x = Percent oil and grease in each sample.

(8) Calculate oil and grease content as percent by weight sinter burden as follows:

Equation 3:

Oil and grease content (percent (%) by weight) = average oil content (%) + one (1) standard deviation (%)

(9) Calculate average sinter burden throughput during the test in tons.

(10) Calculate oil and grease content as an operating parameter in pounds as follows:

Equation 4:

Operating parameter oil content (pounds) = oil and grease content (percent (%) by weight from Equation 1) \times average sinter burden throughput (tons) \times 2000 pounds /ton

(e) An owner or operator may request approval of an alternative oil and grease sampling and analysis procedure by submitting to the department a written request. The request shall include all of the following:

(1) Sampling procedure that includes all of the following:

- (A) A list of raw materials that will be sampled.
- (B) Sampling equipment to be used.
- (C) Sampling location.
- (D) Number of samples to be collected.
- (E) Sampling frequency.
- (F) Amount of sample to be collected.

(2) Analytical procedure that includes all of the following:

- (A) Sample preparation procedure.
- (B) Analytical equipment.
- (C) Analysis procedure.
- (D) Reagents to be used.
- (E) Accuracy and precision of measurements.
- (F) Procedure to identify unrepresentative oil and grease content values.
- (G) Expected variation in pounds in the oil and grease content value as determined by subsection (d)(10).

*Copies of the following documents: Guide to Statistical Problem Solving prepared for the U.S. EPA, Research Triangle Park, North Carolina, under Contract Number 68-02-1505, June 1975, 40 CFR 60, Appendix A; and Method 9071A "Oil and Grease Extraction Method for Sludge Samples" in U.S. EPA publication "Test Methods for Evaluating Solid Wastes, SW-8946, Volume 1C, Chapter 5, revised September 1994 may be obtained from the Government Printing Office, Washington, D.C. 20402. Copies of pertinent sections of any referenced documents are available for copying at the Indiana Department of

Environmental Management, Indiana Government Center-North, 100 North Senate Avenue, Indianapolis, Indiana 46206-6015. (*Air Pollution Control Board; 326 IAC 8-13-5*)

326 IAC 8-13-6 Control measure operation, maintenance, and monitoring

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 6. (a) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by using a control device shall comply with the operation, maintenance, and monitoring requirements of 326 IAC 8-10-8.

(b) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by using a control device shall maintain the control device operating parameter values within the boundaries specified in 326 IAC 8-10-9(b)(3), 326 IAC 8-10-9(b)(4), 326 IAC 8-10-9(b)(5), or 326 IAC 8-10-9(b)(6).

(c) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by controlling the sinter burden oil and grease content shall, after the date that the initial or the subsequent compliance test is completed, for each operating day, monitor the sinter burden oil and grease content. Following procedures in section 5 of this rule, at least one (1) sample shall be collected and analyzed during each of following operating hours of an operating day:

(1) 00:00 - 08:00.

(2) 08:00 - 16:00.

(3) 16:00 - 24:00.

The average oil and grease content for any operating day shall not exceed the operating parameter determined in section 5(d)(10) of this rule. An owner or operator who proposes an alternative sampling frequency shall submit a demonstration that the alternative sampling frequency yields the equivalent oil content value.

(d) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by means other than those specified in subsection (b) or (c), shall, in the notifications required by section 4 of this rule, describe the following:

(1) Operation and maintenance of the control measure.

(2) The process parameter or parameters and the value and range of the process parameter or parameters that indicate compliance with the emission limit.

(3) The operating records that will be maintained.

(*Air Pollution Control Board; 326 IAC 8-13-6*)

326 IAC 8-13-7 Record keeping and reporting

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 7. (a) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by using a control device shall comply with the record keeping and reporting requirements in 326 IAC 8-10-9(b).

(b) Owners or operators of a sintering process that meet the emission limit requirement of section 3 of this rule by controlling the sinter burden oil and grease content shall do the following:

(1) Maintain the following records:

- (A) Applicable operating parameter value and actual operating parameter values.**
- (B) Materials sampled.**
- (C) Sampling date and time.**
- (D) Oil content values.**

(2) In the event that the operating parameter exceeds the applicable value, submit to the department within thirty (30) days of the exceedance, the following information:

- (A) The name and location of the source.**
- (B) Information required in subdivision (1).**
- (C) Cause of exceedance.**
- (D) Corrective action taken.**

(c) In order to verify compliance with section 3(b) of this rule the owner or operator shall keep the following records:

- (1) Operating parameter values and the corresponding VOC emission rate in pounds per ton sinter produced.**
- (2) Sinter produced in tons each operating day.**
- (3) VOCs emitted in pounds each operating day.**

(d) Owners or operators of a sintering process shall maintain all records for a minimum of five (5) years and shall make records available to the department and the U.S. EPA upon request. (*Air Pollution Control Board; 326 IAC 8-13-7*)